DOCUMENT RESUME

ED 464 622 IR 021 391

AUTHOR Ensminger, David C.; Surry, Daniel W.
TITLE Faculty Perceptions of Factors That Facilitate the Implementation of Online Programs.
PUB DATE 2002-04-00
NOTE 9p.; In: Teaching, Learning, & Technology: The Connected Classroom. Proceedings of the Annual Mid-South Instructional Technology Conference (7th, Murfreesboro, TN, April 7-9, 2002); see IR 021 870.
AVAILABLE FROM For full text: http://www.mtsu.edu/~itconf/proceed02/index.html.
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150) -- Tests/Questionnaires (160)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Faculty; Computer Uses in Education; *Distance Education; Educational Technology; Higher Education; *Instructional Design; *Instructional Innovation; Questionnaires; Teacher Surveys; *Web Based Instruction

ABSTRACT

This paper describes the results of a study into the conditions that facilitate the implementation of innovations. This study originated from an earlier paper on the employment of the following eight conditions during the instructional design process: dissatisfaction with the status quo; skills and knowledge; adequate resources; rewards or incentives; adequate time; participation; commitment; and leadership. This study employed an online survey to assess faculty members' perceptions of the relative importance of these eight conditions when implementing an online degree program. The current study used case based scenario questions in order to operationalize the eight conditions. The purpose of this study was to determine which of the eight conditions faculty in higher education perceived as the most influential when implementing an online degree program. Results of the study can assist universities in implementing online degree programs. The results provide information concerning the perceived importance of the eight conditions that facilitate implementation. A copy of the questionnaire is appended. (MES)

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ED 464 622

Faculty Perceptions of Factors That Facilitate the Implementation of Online Programs

David C Ensminger
Daniel W Surry
University of South Alabama

Paper presented at the seventh annual Mid-South Instructional Technology Conference
April 2002, Murfreesboro, TN.

Abstract

This paper describes the results of a study into the conditions that facilitate the implementation of innovations. Ely (1990, 1999), identifies eight conditions that facilitate the implementation of technological and program innovations. Ely's eight conditions are Dissatisfaction with the status quo, Skills and Knowledge, Adequate Resources, Rewards or Incentives, Adequate Time, Participation, Commitment, and Leadership. This study originated from Ensminger's (2001), paper on the employment of these conditions during the instructional design process. This study employed an online survey to assess faculty members' perceptions of the relative importance of these eight conditions when implementing an online degree program. The current study used case based scenario questions in order to operationalize the eight conditions. The purpose of this study was to determine which of the eight conditions faculty in higher education perceived as the most influential when implementing an online degree program. Results of the study can assist universities in implementing online degree programs. The results provide information concerning the perceived importance of the eight conditions that facilitate implementation.

Introduction

As distance education grows in popularity, colleges and universities must work in order to successfully implement online degree programs. Implementation of these programs must occur on both the departmental and intuitional level. Previous research indicates that several factors affect the success of online instructional programs. These include adequate equipment and technological resources, incentives for using technology, comfort level using technology, time for training, need to change existing instructional methods, (Beggs 2000, Lan 2001,). Most of the above stated factors fit into at least one of the eight conditions that facilitate the implementation of innovations or new technology. Don Ely (1999, 1990a) identified eight conditions that influence the success of implementing innovations.

1) Dissatisfaction with the status quo: an emotional discomfort that results form perceiving the current method as inefficient or ineffective. This condition does not have as much influence as the other seven, (Ely 1999, 1990a).

2) Knowledge and Skills: an assessment of the current level of skills and knowledge of the product users. Ely reports that this condition consistently ranks as one of the most influential condition among the eight, (Ely 1999,1990a).

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3) Adequate Resources: the amount of resources currently available to successfully implement the innovation. Resources include finances, hardware, software and personnel, (Ely 1999,1990a).
4) Adequate Time Time: adequate time and compensated time for users to become educated and skilled in how to use the innovation. This condition refers not only top the organization's willingness to provide time but the users' willing to devote learning time for implementation. (Ely, 1999,1990a)
5) Rewards or Incentives: the existence of incentives that motivate users to employ the innovation, or rewards provided by the organization for those who do use the innovation, (Ely, 1999, 1990a).
6) Participation: the involvement of key stakeholders in decision that involve planning and design of the innovation. The condition refers top all stakeholders but emphasizes the participation of product users. (Ely, 1999, 1990a)
7) Commitment: the perception by users that the powerbrokers of the organization (i.e. Presidents, CEO, Vice Presidents) actively support the implementation of the innovation, (Ely, 1999, 1990).
8) Leadership: an active involvement by immediate supervisors in assisting the users in implementing the innovation. (Ely, 1999,1990), This includes providing support and encouragement to users, as well as role modeling use of the innovation.
These conditions hold true for both technological and non-technological innovations. Additionally these conditions traverse institutional and cultural boundaries. Although presented independently, these conditions are interrelated. They affect each other by either supporting or undermining one another, (Ely, 1990b, Ensminger, 2001).
Ely does not present a specific model for implementation. However, by addressing these factors during the adoption phase and development phase universities' increase their chances of successfully implementing an online learning program.
Faculty members represent an import group of stakeholders in this process of implementing web-based instruction on the university level. Knowing how faculty members view the importance of these eight conditions can assist an institution in successfully implementing a web-based instructional program.

Methodology

Participants

Participants were recruited from an instructional technology forum lists sever. Of those who responded (n=56), approximately 65 % worked in higher education settings n=36. Of the sample employed at colleges or universities 28 served at 4-year institutions while eight served at 2-year institutions. The education level of the sample varied; with most participants possessing a master's level degree. The sample includes two bachelors level, 23 masters level, nine doctoral levels, one other, and one not responding. Twenty-eight identified themselves as either faculty or staff, one as upper management, two as middle management, and three as lower management. Thirty-four (94%) agreed that they had played a facilitating role in implementing a new program or technology at their institution.

Questionnaire

The questionnaire used case based questions. Case questions involving the eight conditions centered around the implementation of a new online degree program at a university. Each question presented a single condition. (e.g. Incentives- Implementing a

new online degree program when faculty's teaching load is reduced so they can develop online courses.) In order to reduce pattern based responding, half of the case questions were written with the condition being absent. (See appendix one for a list of questions.) Participants rated the success of implementation on a five point Likert scale. The scale ranged from (1) very easy to implement to (5) very difficult to implement.

In addition to the case based questions, respondents were asked to indicate which of the eight conditions they thought were most important to the implementation of new program or technology. Finally, a set of questions were used to assess demographic information, (i.e. gender, level of education and profession).

Procedure and Data Analysis

Members of the ITT form received an e-mail requesting their participation in completing an online questionnaire. This message included the URL of the website home page that explained the purpose of the research. Those who chose to participate could were able to gain access to the questionnaire through the homepage. Participants who completed the questionnaire then submitted their response via e-mail. Participant's response were automatically e-mailed to the researchers. All responses were anonymous and no information on the e-mail provided us with personal knowledge about the participant.

We reversed scored the case based questions that had the condition absent. Next, we generated frequency charts and bar graphs for each of the conditions. Cumulative percentages were calculated for each of the condition-based questions. Finally, we calculated percentages based on participants' perception of the importance of the condition in implementing a new program or technology.

Results and Discussion

The purpose of this study is to evaluate faculties' perceptions of the eight conditions that facilitate implementation; the results will focus only on those percentages associated with the ratings of very easily implemented or easily implemented. Analysis of the case base questions indicates that the participants perceived all the conditions as playing a role in successfully implementing an online degree program. Cumulative percentages for ratings of very easily implemented and easily implemented ranged from 63.9 percent to 100 percent. Dissatisfaction with the status quo evidenced the highest cumulative total while leadership and time evidenced the lowest cumulative percentage.

When considering cumulative totals all conditions appeared valuable in the implementation process. However, faculty perceived several conditions as more important than the rest. These conditions had a larger percentage of participants rating the case questions as very easily implemented. These conditions include recourses 86.1 percent, knowledge and skills 77.8 percent, and dissatisfaction with the status quo 63.9 percent. (See table one). These three conditions also had the highest cumulative totals, with a range of 97.2 percent to 100 percent. Time had the lowest percent for very easily implemented 2.8 percent, and the lowest cumulative percentage 63.9 percent.

Table 1.

Responses to case based questions by percentages.

Analysis of participants' perception of which conditions were important when implementing a new program or technology, indicated that adequate resources is the most important factor for implementing an online degree program. Eighty nine percent of the participants' identified recourses as important, 72 percent indicated that incentives and participation were important. (See table two for a rank order of the conditions.)

Table 2.
Perceived importance of variable in implementation presented in rank order by percents.

From the results of this study, it appears that faculty considers all eight conditions as important when implementing online programs. Of the eight conditions studied, adequate resources (i.e. equipment, personnel, and finances) stand out as the most important of the conditions when implementing an online program.
Faculty also perceived adequate resources as the most important condition when implementing a new program or technology. Along with adequate resources faculty considered adequate skills& knowledge, and dissatisfaction with the status quo important. Theses results indicate that faculty think that universities must provide the needed resources to support online degree programs. Additionally, those implementing the program (i.e. the faculty) must possess the needed design, develop, and instructional skills in order for the program to be successful. Finally, if faculty feel that the current methods of instruction are inadequate the level of motivation for changing to an online program increase. Although results indicated that this condition was considered important, the original question was stated with the condition being absent, (i.e. Implementing a new online degree program when faculty prefer the current in class program). At institutions where faculty are satisfied with the current methods of instruction personal interest in teaching online course or using technology in instruction may motivate some faculty to develop online courses. For those not personally motivated institutions may have to provide incentives or rewards in order to implement online programs. The results of this study support this idea. Approximately seventy two percent of the participants indicated that incentives and rewards played an important role in implementing a new program or technology. Results also indicate that faculty consider participation in designing developing and decision making important when implementing an innovation. This information supports the notation that universities need to view faculty as important stakeholders when developing innovations that will directly affect faculty members, (i.e. online degree programs). Finally, faculty considers the level of commitment from institutional leaders, (i.e. Presidents, Vice Presidents) as an important when implementing innovations. This requires that University leaders become actively involved in the implementation processes in order to show visible support for the changes.

This research provides universities with a better understanding of how one important set of stakeholder (i.e. faculty) view the importance of the eight conditions that facilitate implementation. Although, Ely's conditions address the factors that help facilitate the implementation of an innovation, these conditions do not provide us with a model. Universities must still face the problem of how to successfully implement online learning programs. Surry, Robinson, & Marcinkiewicz (2001) present a model that can assist universities. The RIPPLES model directly and indirectly address all the eight conditions that facilitate implementation. The RIPPLES model addresses the resources, infrastructure, people, policies, learning, evaluation and support when implementing instructional technology programs. Universities just starting to implement an online learning program can use the RIPPLES model as a foundation for developing an implementation plan.
Conclusion

As universities face the task of developing online programs, they must focus on the eight conditions that facilitate implementation. Because faculty play a key role in the implementation process universities must consider faculty members' perceptions of these eight conditions. These perceptions can guide institutions to focus on the most important conditions as perceived by faculty. By doing so universities can better design implementation plans that are more likely to be met with success among faculty than be met with resistance.

Author's Notes

Questions or comments about this paper should be directed to David Ensminger, University of South Alabama, College of Education, UCOM 3700, Mobile, AL 36688. Email: milminger@earthlink.net. Daniel Surry and David Ensminger are Co-Directors of the Implementation Phase Research Project (IPRP). Papers related to this topic are available online at the IPRP's website: http://iphase.org.

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Appendix A

Implementing a new on line degree program when faculty prefer the current in class program.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when the faculty is not familiar with on line instructional methods.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when there is not enough computer software for faculty to use to design courses.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when faculty's teaching load is reduced so they can develop on line courses.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement

Implementing a new on line degree program when faculty are given a stipend for each on line class they teach.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when faculty were included in decisions about what courses should be placed on line first.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when the University President has only supported the program through a couple of vague memos.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when the department chair is excited about and has openly endorsed the program.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement

Overall, which of the following 8 conditions do you think are most important in facilitating the implementation of a new program or technology (check all that you think are most important)?
Dissatisfaction with the current way things are done
Workers have necessary skills and knowledge
Adequate resources
Rewards and incentives
Time to learn the new program
Participation in Decision Making
Commitment from Upper Management

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